

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions  
(formerly Eaton)

Brand: FAIL-SAFE

Report Number: P392587

Luminaire Tested: **MWL-3-30-47-UNV-L935-EDD**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P392587  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1910-565-13 &  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: MWL-3-30-47-UNV-L935-EDD  
Description: MWL 3FT MEDICAL LED FIXTURE  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

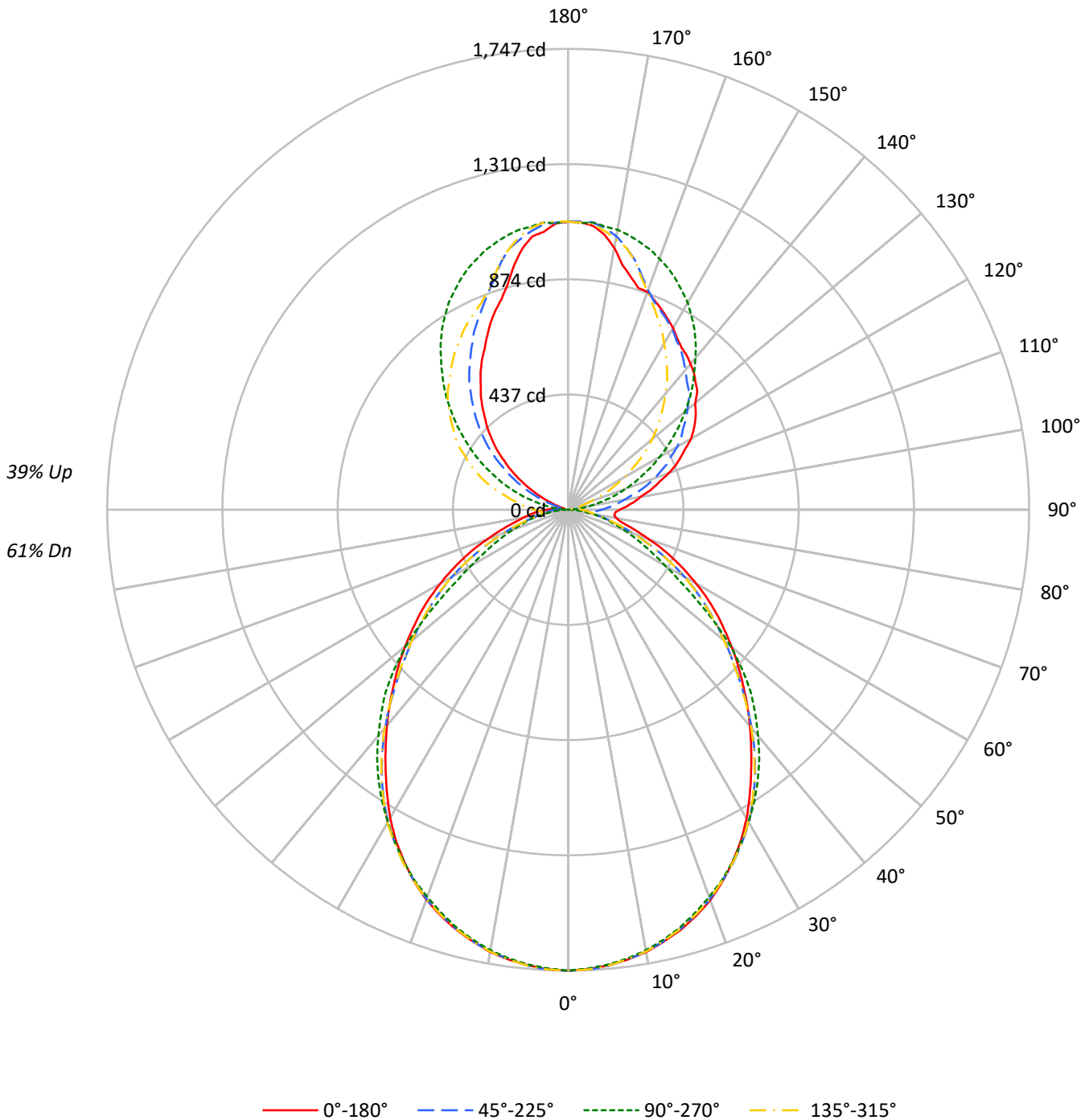
Lumens per Lamp: N/A  
Luminaire Lumens: 6666.8 lumens  
Efficiency: N/A  
Efficacy: 79.7 lumens/watt  
Spacing Criteria (0/90/45): 1.16 / 1.17 / 1.25  
Luminous Opening: Rectangular w/ Sides (W: 0.42' x L: 3' x H: 0.42')  
CIE Type: Semi-Direct

Input Watts (W): 83.628  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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CATALOG NUMBER: MWL-3-30-47-UNV-L935-EDD

### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				20	
RC	80				70				50				30				10	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	110	110	110	110	103	103	103	103	89	89	89	77	77	77	66	66	66	61
1	100	96	92	89	94	90	87	84	79	76	74	68	66	65	59	57	56	51
2	92	84	78	73	86	79	74	69	69	65	62	60	57	55	52	50	48	44
3	84	75	67	61	78	70	64	58	62	57	52	54	50	47	46	44	41	38
4	77	66	58	52	72	62	55	50	55	50	45	48	44	40	42	39	36	33
5	71	59	51	45	66	56	49	43	49	44	39	43	39	35	38	34	32	29
6	66	53	45	40	61	50	43	38	45	39	34	39	35	31	35	31	28	25
7	61	48	40	35	57	46	39	33	41	35	31	36	31	28	32	28	25	23
8	56	44	36	31	53	42	35	30	37	31	27	33	28	25	29	25	23	20
9	53	40	33	28	49	38	31	27	34	29	25	31	26	22	27	23	20	18
10	49	37	30	25	46	35	29	24	32	26	22	28	24	20	25	21	19	17

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°	270°
0°	15047	15047	15047	15047
5°	14809	13760	14809	13760
10°	14530	12604	14530	12604
15°	14171	11523	14151	11523
20°	13739	10493	13718	10493
25°	13147	9543	13126	9543
30°	12446	8615	12418	8615
35°	11581	7742	11559	7742
40°	10788	6840	10756	6840
45°	10005	5957	9982	5957
50°	9293	4902	9268	4902
55°	8590	3658	8570	3658
60°	7766	2682	7755	2682
65°	6892	2027	6892	2027
70°	5870	1503	5884	1503
75°	5068	1085	5121	1085
80°	5162	686	4757	686
85°	6751	289	4838	289



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	164.5	2.5
10°-20°	463.1	6.9
20°-30°	678.5	10.2
30°-40°	769.1	11.5
40°-50°	723.2	10.8
50°-60°	574.2	8.6
60°-70°	373.8	5.6
70°-80°	190.8	2.9
80°-90°	100.3	1.5
90°-100°	104.4	1.6
100°-110°	171.9	2.6
110°-120°	290.9	4.4
120°-130°	395.0	5.9
130°-140°	450.3	6.8
140°-150°	448.9	6.7
150°-160°	390.8	5.9
160°-170°	274.9	4.1
170°-180°	102.3	1.5
0°-30°	1306.0	19.6
0°-40°	2075.1	31.1
0°-60°	3372.5	50.6
0°-90°	4037.4	60.6
90°-120°	567.3	8.5
90°-150°	1861.5	27.9
90°-180°	2629.0	39.4
0°-180°	6666.8	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1747	1747	1747	1747	1747	
5°	1734	1731	1734	1731	1734	165
15°	1649	1639	1646	1639	1649	464
25°	1473	1473	1471	1473	1473	677
35°	1209	1252	1206	1252	1209	757
45°	936	978	934	978	936	724
55°	686	592	684	592	686	612
65°	439	313	439	313	439	436
75°	231	154	234	154	231	254
85°	177	36	127	36	177	146
90°	195	2	80	2	195	108
95°	235	32	52	32	235	202
105°	339	153	15	153	339	358
115°	470	312	110	312	470	467
125°	588	489	268	489	588	525
135°	683	667	430	667	683	527
145°	750	834	578	834	750	473
155°	837	964	726	964	837	386
165°	915	1050	885	1050	915	260
175°	1080	1093	1057	1093	1080	101
180°	1092	1092	1092	1092	1092	



TEST NUMBER: P392587

CATALOG NUMBER: MWL-3-30-47-UNV-L935-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	1747.4	1747.4	1747.4	1747.4	1747.4	1747.4	1747.4	1747.4	1747.4	1747.4	1747.4
2.5°	1743.3	1745.6	1744.8	1742.1	1740.4	1741.3	1744.8	1745.6	1744.1	1745.6	1744.8
5°	1734.0	1736.3	1736.2	1732.9	1731.1	1732.9	1735.5	1736.3	1734.0	1736.3	1735.5
7.5°	1720.3	1723.6	1719.4	1718.5	1715.9	1717.7	1718.6	1722.8	1720.3	1722.8	1718.6
10°	1702.4	1704.1	1701.6	1697.3	1695.6	1696.5	1700.7	1702.5	1702.4	1702.5	1700.7
12.5°	1676.9	1677.0	1674.5	1671.0	1669.5	1671.0	1674.5	1675.4	1675.3	1675.4	1674.5
15°	1648.8	1646.4	1644.8	1642.2	1638.9	1641.4	1644.0	1644.9	1646.4	1644.9	1644.0
17.5°	1614.1	1612.5	1609.1	1606.6	1601.6	1606.6	1608.4	1611.6	1611.6	1611.6	1608.4
20°	1575.1	1572.5	1571.0	1566.9	1561.8	1566.1	1570.2	1571.0	1572.6	1571.0	1570.2
22.5°	1526.8	1526.8	1524.3	1523.5	1521.1	1522.8	1523.5	1525.2	1525.2	1525.2	1523.5
25°	1473.3	1475.0	1478.5	1476.9	1472.8	1476.2	1476.9	1472.7	1471.0	1472.7	1476.9
27.5°	1415.7	1418.3	1424.2	1427.7	1421.0	1426.9	1422.7	1415.8	1413.3	1415.8	1422.7
30°	1352.1	1356.3	1369.9	1375.0	1366.7	1373.5	1367.5	1354.0	1349.0	1354.0	1367.5
32.5°	1280.0	1286.8	1302.9	1314.9	1312.4	1313.2	1300.6	1283.7	1276.8	1283.7	1300.6
35°	1208.8	1214.8	1234.3	1252.9	1252.2	1250.6	1231.9	1212.4	1206.5	1212.4	1231.9
37.5°	1138.4	1139.3	1159.7	1185.1	1189.4	1182.7	1157.3	1137.0	1136.1	1137.0	1157.3
40°	1071.5	1068.9	1082.5	1112.2	1119.0	1110.6	1079.3	1065.8	1068.4	1065.8	1079.3
42.5°	1003.6	994.3	1000.2	1036.7	1049.5	1035.1	997.9	991.1	1000.4	991.1	997.9
45°	935.7	923.0	921.3	953.6	978.3	952.0	918.3	920.7	933.5	920.7	918.3
47.5°	873.0	856.9	845.0	868.9	893.4	868.1	841.9	854.6	870.8	854.6	841.9
50°	808.5	790.8	772.9	787.4	802.0	785.9	769.9	787.7	806.3	787.7	769.9
52.5°	744.9	730.5	704.3	703.4	697.7	702.0	702.1	727.5	742.7	727.5	702.1
55°	685.7	671.2	638.2	623.0	591.7	621.5	635.9	668.9	684.1	668.9	635.9
57.5°	623.8	612.7	574.6	537.3	498.4	535.8	572.3	610.4	622.2	610.4	572.3
60°	559.4	553.5	509.4	451.0	425.5	450.2	507.8	551.9	558.6	551.9	507.8
62.5°	498.3	493.2	443.2	380.5	364.5	379.8	441.7	491.7	497.5	491.7	441.7
65°	439.0	427.1	377.2	317.8	312.8	317.0	376.4	426.4	439.0	426.4	376.4
67.5°	383.0	367.8	316.1	266.1	266.1	266.1	315.3	367.1	383.0	367.1	315.3
70°	322.1	303.5	262.8	220.3	223.7	220.3	262.8	304.2	322.9	304.2	262.8
72.5°	275.4	244.9	213.6	178.8	185.6	178.0	213.6	245.7	277.0	245.7	213.6
75°	231.3	199.2	166.1	141.5	154.3	141.5	166.9	199.9	233.7	199.9	166.9
77.5°	200.2	164.0	128.0	111.1	123.7	111.1	128.7	161.7	197.1	161.7	128.7
80°	186.1	147.7	104.0	83.0	92.3	83.0	102.4	135.4	171.5	135.4	102.4
82.5°	176.6	142.6	94.6	60.1	66.1	60.1	85.3	114.9	147.4	114.9	85.3
85°	176.8	147.0	97.9	48.0	36.4	46.5	75.7	100.1	126.7	100.1	75.7
87.5°	181.6	162.8	108.4	49.4	11.0	38.6	64.5	88.9	102.3	88.9	64.5
90°	195.4	181.0	126.8	55.4	1.6	26.1	50.6	72.4	80.1	72.4	50.6
92.5°	216.7	203.2	146.8	69.1	13.1	16.0	41.3	60.7	65.8	60.7	41.3
95°	234.8	227.7	169.8	83.4	31.7	6.5	31.2	49.0	52.3	49.0	31.2
97.5°	259.4	253.0	190.9	109.5	55.6	11.0	20.7	41.2	43.7	41.2	20.7
100°	276.7	271.7	216.2	142.6	84.8	27.2	12.3	29.9	34.2	29.9	12.3
102.5°	309.5	296.1	243.6	174.2	116.3	49.4	14.1	18.9	23.1	18.9	14.1
105°	338.9	324.7	281.3	207.3	153.4	79.5	32.5	15.2	14.8	15.2	32.5
107.5°	367.7	358.4	315.1	241.2	191.9	114.2	58.8	31.9	22.8	31.9	58.8
110°	405.4	395.3	348.3	275.0	231.9	151.0	88.8	56.5	45.0	56.5	88.8



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
112.5°	441.5	433.8	379.1	310.5	273.5	191.1	125.8	86.5	75.8	86.5	125.8
115°	470.0	465.4	414.5	343.5	312.0	236.5	166.5	122.6	109.7	122.6	166.5
117.5°	500.1	498.4	440.7	377.5	358.2	277.3	204.3	158.9	145.1	158.9	204.3
120°	537.8	531.6	476.8	411.3	402.1	320.5	245.8	201.2	186.6	201.2	245.8
122.5°	564.0	560.2	507.6	444.6	444.6	365.2	285.9	241.4	225.9	241.4	285.9
125°	587.8	586.3	530.8	476.8	489.2	406.1	330.6	285.2	268.3	285.2	330.6
127.5°	609.5	611.7	560.8	512.3	534.7	447.6	374.4	324.5	306.8	324.5	374.4
130°	627.9	635.5	590.1	544.7	577.7	493.1	414.5	363.7	352.2	363.7	414.5
132.5°	664.0	659.4	619.4	577.7	624.0	534.7	456.2	403.0	389.9	403.0	456.2
135°	682.6	684.0	644.8	606.2	667.1	576.2	495.5	443.0	430.0	443.0	495.5
137.5°	704.8	700.2	664.8	641.7	707.1	617.1	534.0	485.5	464.7	485.5	534.0
140°	721.0	720.3	691.0	672.5	750.2	656.3	573.2	524.0	504.7	524.0	573.2
142.5°	738.0	742.6	717.2	706.5	793.4	698.0	615.5	561.7	543.2	561.7	615.5
145°	749.5	759.5	743.3	748.7	834.2	744.2	652.5	597.8	577.8	597.8	652.5
147.5°	768.8	781.9	762.5	778.8	869.6	785.0	689.5	635.5	617.8	635.5	689.5
150°	795.0	801.1	789.6	820.4	905.7	830.4	727.3	671.8	654.0	671.8	727.3
152.5°	815.8	823.5	810.3	865.8	934.3	872.0	768.8	707.2	686.4	707.2	768.8
155°	837.3	840.4	831.2	909.8	964.3	912.8	801.9	746.5	726.5	746.5	801.9
157.5°	857.3	863.5	852.7	941.9	990.4	947.4	839.6	785.8	768.0	785.8	839.6
160°	878.9	878.9	885.1	981.3	1012.0	979.0	879.7	828.8	804.2	828.8	879.7
162.5°	881.2	895.9	929.0	1008.3	1033.7	1006.0	922.8	859.6	838.0	859.6	922.8
165°	915.1	928.2	978.3	1032.1	1049.8	1029.8	975.9	910.5	885.1	910.5	975.9
167.5°	950.5	978.3	1018.3	1059.0	1065.3	1052.1	1016.8	971.3	948.2	971.3	1016.8
170°	1007.4	1031.3	1052.1	1069.0	1077.6	1069.8	1042.1	1019.0	1004.3	1019.0	1042.1
172.5°	1052.0	1068.3	1076.8	1087.6	1082.2	1079.1	1065.3	1053.7	1045.1	1053.7	1065.3
175°	1080.4	1084.4	1092.2	1088.3	1093.0	1084.5	1085.3	1089.8	1057.4	1089.8	1085.3
177.5°	1090.4	1096.7	1093.7	1086.8	1087.6	1086.0	1089.1	1091.3	1085.9	1091.3	1089.1
180°	1092.2	1092.2	1092.2	1092.2	1092.2	1092.2	1092.2	1092.2	1092.2	1092.2	1092.2



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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1747.4	1747.4	1747.4	1747.4	1747.4	1747.4
2.5°	1741.3	1740.4	1742.1	1744.8	1745.6	1743.3
5°	1732.9	1731.1	1732.9	1736.2	1736.3	1734.0
7.5°	1717.7	1715.9	1718.5	1719.4	1723.6	1720.3
10°	1696.5	1695.6	1697.3	1701.6	1704.1	1702.4
12.5°	1671.0	1669.5	1671.0	1674.5	1677.0	1676.9
15°	1641.4	1638.9	1642.2	1644.8	1646.4	1648.8
17.5°	1606.6	1601.6	1606.6	1609.1	1612.5	1614.1
20°	1566.1	1561.8	1566.9	1571.0	1572.5	1575.1
22.5°	1522.8	1521.1	1523.5	1524.3	1526.8	1526.8
25°	1476.2	1472.8	1476.9	1478.5	1475.0	1473.3
27.5°	1426.9	1421.0	1427.7	1424.2	1418.3	1415.7
30°	1373.5	1366.7	1375.0	1369.9	1356.3	1352.1
32.5°	1313.2	1312.4	1314.9	1302.9	1286.8	1280.0
35°	1250.6	1252.2	1252.9	1234.3	1214.8	1208.8
37.5°	1182.7	1189.4	1185.1	1159.7	1139.3	1138.4
40°	1110.6	1119.0	1112.2	1082.5	1068.9	1071.5
42.5°	1035.1	1049.5	1036.7	1000.2	994.3	1003.6
45°	952.0	978.3	953.6	921.3	923.0	935.7
47.5°	868.1	893.4	868.9	845.0	856.9	873.0
50°	785.9	802.0	787.4	772.9	790.8	808.5
52.5°	702.0	697.7	703.4	704.3	730.5	744.9
55°	621.5	591.7	623.0	638.2	671.2	685.7
57.5°	535.8	498.4	537.3	574.6	612.7	623.8
60°	450.2	425.5	451.0	509.4	553.5	559.4
62.5°	379.8	364.5	380.5	443.2	493.2	498.3
65°	317.0	312.8	317.8	377.2	427.1	439.0
67.5°	266.1	266.1	266.1	316.1	367.8	383.0
70°	220.3	223.7	220.3	262.8	303.5	322.1
72.5°	178.0	185.6	178.8	213.6	244.9	275.4
75°	141.5	154.3	141.5	166.1	199.2	231.3
77.5°	111.1	123.7	111.1	128.0	164.0	200.2
80°	83.0	92.3	83.0	104.0	147.7	186.1
82.5°	60.1	66.1	60.1	94.6	142.6	176.6
85°	46.5	36.4	48.0	97.9	147.0	176.8
87.5°	38.6	11.0	49.4	108.4	162.8	181.6
90°	26.1	1.6	55.4	126.8	181.0	195.4
92.5°	16.0	13.1	69.1	146.8	203.2	216.7
95°	6.5	31.7	83.4	169.8	227.7	234.8
97.5°	11.0	55.6	109.5	190.9	253.0	259.4
100°	27.2	84.8	142.6	216.2	271.7	276.7
102.5°	49.4	116.3	174.2	243.6	296.1	309.5
105°	79.5	153.4	207.3	281.3	324.7	338.9
107.5°	114.2	191.9	241.2	315.1	358.4	367.7
110°	151.0	231.9	275.0	348.3	395.3	405.4





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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
112.5°	191.1	273.5	310.5	379.1	433.8	441.5
115°	236.5	312.0	343.5	414.5	465.4	470.0
117.5°	277.3	358.2	377.5	440.7	498.4	500.1
120°	320.5	402.1	411.3	476.8	531.6	537.8
122.5°	365.2	444.6	444.6	507.6	560.2	564.0
125°	406.1	489.2	476.8	530.8	586.3	587.8
127.5°	447.6	534.7	512.3	560.8	611.7	609.5
130°	493.1	577.7	544.7	590.1	635.5	627.9
132.5°	534.7	624.0	577.7	619.4	659.4	664.0
135°	576.2	667.1	606.2	644.8	684.0	682.6
137.5°	617.1	707.1	641.7	664.8	700.2	704.8
140°	656.3	750.2	672.5	691.0	720.3	721.0
142.5°	698.0	793.4	706.5	717.2	742.6	738.0
145°	744.2	834.2	748.7	743.3	759.5	749.5
147.5°	785.0	869.6	778.8	762.5	781.9	768.8
150°	830.4	905.7	820.4	789.6	801.1	795.0
152.5°	872.0	934.3	865.8	810.3	823.5	815.8
155°	912.8	964.3	909.8	831.2	840.4	837.3
157.5°	947.4	990.4	941.9	852.7	863.5	857.3
160°	979.0	1012.0	981.3	885.1	878.9	878.9
162.5°	1006.0	1033.7	1008.3	929.0	895.9	881.2
165°	1029.8	1049.8	1032.1	978.3	928.2	915.1
167.5°	1052.1	1065.3	1059.0	1018.3	978.3	950.5
170°	1069.8	1077.6	1069.0	1052.1	1031.3	1007.4
172.5°	1079.1	1082.2	1087.6	1076.8	1068.3	1052.0
175°	1084.5	1093.0	1088.3	1092.2	1084.4	1080.4
177.5°	1086.0	1087.6	1086.8	1093.7	1096.7	1090.4
180°	1092.2	1092.2	1092.2	1092.2	1092.2	1092.2

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